Appendix A

Density of Cooking Oil

The Physics Factbook
Edited by Glenn Elert -- Written by his students
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Bibli graphic Entry	Result (w/surrounding text)	Standardized Result
Weast, R.C., et al. *CRC Handbook of Chemistry and Physics*. Boca Raton: CRC Press, 1988-1989: F3.	[see table 1]	0.918 - 0.926 g/cm^3
Subrahmanyam, M.S.R., et al. *Estimation of the Sharma and Thermoacoustic Properties of Vegetable Oil. Journal of the American Oil Chemists Society*. 71 (August 1994).	[see table 2]	0.913 - 0.919 g/cm^3
Hodgman, C.D. & N.A. Lange. *Handbook of Chemistry and Physics*. Cleveland: Chemical Rubber Co., 1924: 312-313.	[see table 3]	0.915 - 0.928 g/cm^3
Spectrum - Chemical, Safety and Laboratory Products. Catalog. Spectrum Quality Products, 1997-1999	[see table 4]	0.910 - 0.920 g/cm^3

Cooking oil includes the well-known olive, sunflower, and canola oils and the not so well-known coconut, soy, and palm oils. Oil is removed from olives by pressing. The oil obtained from the first pressing is called virgin oil and is considered to be the highest quality salad and cooking oil. A second pressing of the olives produces oil of lesser quality that must be refined. Sunflower oil, because of its high protein content, is considered as semidrying oil and can be used in making paints or other industrial uses. But it is much more popular as a food and is considered by some as desirable as olive oil. It is also used in cooking, frying, and in the manufacture of margarine and shortening. Canola oil, which is was previously called rapeseed oil, differs from other vegetable oils because it contains significant quantities of eicosenoic and erucic fatty acids. It is used as both an edible oil and as a lubricant for metal surfaces because of high viscosity of rapeseed oil.

Coconut oil comes from a part of the coconut called the copra, which is mostly made up of highly saturated oil. The oil is extracted from the copra by crushing and is used in baking and a variety of prepared foods. Of all the edible oils, coconut has the most nonedible uses. It is used in cosmetics, toiletries, and soap production. Palm oil is similar to coconut. Because of it's highly saturated, it is used to make shortening and frying oil. Soy oil, obtained by solvent extraction, is the dominant vegetable oil worldwide. Most of the production is consumed as salad oil, cooking oil, and margarine. It is also used in a variety of prepared foods such as frozen desserts and coffee whiteners. Just like sunflower oil, it is considered a semidrying oil and has a variety of industrial uses.

The density of the oils varies with each type and temperature. The range is from 0.91 to 0.93 g/cm^3 between the temperatures of 15 °C and 25 °C. Comparing to water, whose density is 1.00 g/ml, cooking oil is less dense.

Inga Dorfman -- 2000

Table 1

Oils	Density (g/cm^3)	Temp (°C)
coconut	0.925	15
cotton seed	0.926	16
olive	0.918	15

Table 2

T mp (°C)	Sunfl wer	Ric Bran	Gr undnut	C c nut
20	0.919	0.918	0.913	0.919

Table 3

Nam	Sp cific Gravity @ 15.5 °C	Nam	Specific Gravity @ 15.5 °C
coconut	0.9259	peanut (arachis)	0.917-0.9209
corn (maize)	0.9213-0.9250	rapeseed	0.9133-0.9168
cotton seed	0.922-0.925	safflower	0.9246-0.9280
olive	0.9150-0.9180	sesame	0.9203-0.9237
palm	0.9210-0.9240	soja beans	0.924-0.9279
palm kernel	0.9119	sunflower	0.924-0.9258

Table 4

Cotton Seed oil, U.S.P./N.F. specific gravity @ 25 °C	0.915-0.921
Olive Oil, U.S.P./N.F specific gravity @ 25 °C	0.910-0.915
Peanut Oil, U.S.P./N.F. specific gravity @ 25 °C	0.912-0.920